PEOSH Asbestos Standard for Construction 29 CFR 1926.1101

Division of Environmental and Occupational Health Services

October, 1996

The federal OSHA general industry Asbestos Standard (29 CFR 1910.1001) and construction industry Asbestos Standard (29 CFR 1926.1101) have been adopted under the New Jersey Public Employees Occupational and Safety Health (PEOSH) Act. These new asbestos standards replace the PEOSH Asbestos Standard (N.J.A.C. 12:100-12).

This information bulletin provides an overview of the construction industry Asbestos Standard.

For information on the PEOSH general industry Asbestos Standard, obtain the PEOSH information bulletin "General Industry Asbestos Standard."

BACKGROUND

In the construction industry, asbestos is found in installed products such as shingles, floor tiles, cement pipe and sheet, roofing felts, insulation, ceiling tiles, fire-resistant drywall, and acoustical products. Very few asbestos-containing products are currently being installed. Consequently, most worker exposures occur during the removal of asbestos and the renovation and maintenance of buildings and structures containing asbestos.

Asbestos fibers enter the body by being breathed in or by being swallowed and can become lodged in the respiratory or digestive systems. Exposure to asbestos can cause many disabling or fatal diseases; these diseases take years to develop. Among these diseases is asbestosis, a chronic lung disease characterized by lung scarring which stiffens the lung. This interferes with normal lung function, resulting in shortness of breath, increased vulnerability to lung infections, and sometimes death. Occupational exposure to asbestos increases the risk of lung and gastrointestinal cancer and mesothelioma. Mesothelioma is a cancerous tumor that spreads rapidly in the membranes covering the lungs and body organs.

WHAT ACTIVITIES ARE COVERED?

The asbestos standard for the construction industry regulates asbestos exposure for the following activities:

- demolishing or salvaging structures where asbestos is present;
- removing or encapsulating asbestos-containing materials;
- constructing, altering, repairing, maintaining, or renovating asbestos-containing structures or substrates;
- installing asbestos-containing products;
- cleaning up asbestos spills/emergencies; and
- transporting, disposing, storing, containing, and housekeeping involving asbestos or asbestos-containing products on a construction site.

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WHAT IS THE NEW CLASSIFICATION SYSTEM FOR ASBESTOS CONSTRUCTION WORK?

The construction industry Asbestos Standard establishes a new classification system for asbestos construction work, which clearly spells out mandatory work practices to follow to reduce worker exposures. Four classes of construction activity are matched with increasingly stringent control requirements.

Class I asbestos work, the most potentially hazardous class of asbestos jobs, involves the removal of thermal system insulation and sprayed-on or troweled-on surfacing asbestos-containing materials or presumed asbestos-containing materials. Thermal system insulation includes asbestos-containing materials applied to pipes, boilers, tanks, ducts, or other structural components to prevent heat loss or gain. Surfacing materials include decorative plaster on ceilings, acoustical asbestos-containing materials on decking, or fireproofing on structural members.

Class II asbestos work includes the removal of other types of asbestos-containing materials that are not thermal system insulation such as resilient flooring and roofing materials containing asbestos. Examples of Class II work include removal of floor or ceiling tiles, siding, roofing, or transite panels.

Class III asbestos work includes repair and maintenance operations where asbestos-containing or presumed asbestos-containing materials are disturbed.

Class IV asbestos work operations include custodial activities where employees clean up asbestos-containing waste and debris. This includes dusting contaminated surfaces, vacuuming contaminated carpets, mopping contaminated floors, and cleaning up asbestos-containing or presumed asbestos-containing materials.

WHAT JOBS ARE COVERED BY THE STANDARD?

The Standard regulates asbestos exposure for the following activities:

- demolishing or salvaging structures where asbestos is present,
- removing or encapsulating asbestos-containing materials,
- constructing, altering, repairing, maintaining, or renovating asbestos-containing structures or substrates,
- installing asbestos-containing products;
- cleaning up asbestos spills/ emergencies, and
- transporting, disposing, storing, containing, and housekeeping involving asbestos or asbestos-containing products on a construction site.

WHAT ARE THE KEY PROVISIONS OF THE STANDARD?

- Permissible Exposure Limits
- Guidelines for Exposure Monitoring
- Regulated Areas
- Control Methods
- Respiratory Protection
- Personal Protective Clothing
- Hygiene Facilities
- Communication of Hazards
- Housekeeping
- Medical Surveillance
- Competent Person
- Recordkeeping

PERMISSIBLE EXPOSURE LIMITS (PELS)

- **Time-Weighted Average (TWA)** The employer shall ensure that no employee is exposed to an airborne concentration of asbestos in excess of 0.1 fiber per cubic

centimeter of air (0.1 f/cc) as averaged over an 8 hour TWA day.

- **Excursion Limit (EL)** The employer shall ensure that no employee is exposed to an airborne concentration of asbestos in excess of 1.0 fiber per cubic centimeter of air (1 f/cc) as averaged over a sampling period of 30 minutes.

WHAT ARE THE REQUIREMENTS FOR EXPOSURE ASSESSMENTS?

Employers must assess asbestos operations for the potential to generate airborne fibers. Employers must use exposure monitoring data to assess employee exposures.

Initial Exposure Assessments

The designated "competent person" (see page 17) must assess exposures immediately before or as the operation begins to determine expected exposures. The assessment must be done in time to comply with all standard requirements triggered by exposure data or the lack of a negative exposure assessment and to provide the necessary information to ensure all control systems are appropriate and work properly.

The initial exposure assessment must be based on the following:

- the results of employee exposure monitoring,

- all observations, information, or calculations indicating employee exposure to asbestos, including any previous monitoring, and

- the presumption that employees performing Class I asbestos work are exposed in excess of the PEL and EL until exposure monitoring proves they are not.

Negative Exposure Assessments

For any specific asbestos job that trained employees perform, employers may show that exposure will be below the PEL by performing an assessment and confirming it with the following data:

- "objective data" demonstrating an asbestos-containing material or activities involving it cannot release airborne fibers in excess of the PEL and EL,

- "historical data" from prior monitoring for similar asbestos jobs performed within 12 months of the current job and obtained during work operations conducted under similar conditions,

- employees' training and experience were no more extensive for previous jobs than training for current employees,

- data show a high degree of certainty that employee exposures will not exceed the PEL and EL under current conditions, and

- current initial exposure monitoring used breathing zone air samples representing the 8-hour TWA and 30-minute short-term exposures for each employee in those operations most likely to result in exposures over the PEL for the entire asbestos job.

WHAT ARE THE REQUIREMENTS FOR AIR MONITORING?

Exposure Monitoring

- Employee exposure measurements must be made from breathing zone air samples representing the 8-hour TWA and 30-minute EL exposures for each employee.

- Employers must take one or more samples representing full-shift exposure to determine the 8-hour TWA exposure in each work area. To determine short-term employee exposures, employers must take one or more samples representing 30-minute exposures for the operations most likely to expose employees above the excursion limit in each work area.

- Employers must allow affected employees and their designated representatives to observe any employee exposure monitoring. When observation requires entry into a regulated area, the employer must provide and require the use of protective clothing and equipment.

Periodic Monitoring

- For Class I and II jobs, employers must monitor daily each employee working in a regulated area, unless a negative exposure assessment for the entire operation already exists and nothing has changed.

- When all employees use supplied-air respirators operated in positive-pressure mode, employers may discontinue daily monitoring. Note that for employees performing Class I work using control methods not recommended in the standard, employers must continue daily monitoring, even when employees use supplied-air respirators.

- For operations other than Class I and II, employers must monitor all work where exposures can possibly exceed the PEL often enough to validate the exposure prediction. If periodic monitoring shows employee exposures below the PEL and EL, the employer may discontinue monitoring for the represented employees.

Additional Monitoring

- Additional monitoring is required when changes in processes, control equipment, level of personnel experience, or work practices result in exposures above the PEL or EL.

WHAT IS REQUIRED IN A REGULATED AREA?

- A regulated area is a marked off site where employees work with asbestos, including any adjoining area(s) where debris and waste from asbestos work accumulates or where airborne concentrations of asbestos exceed or can possibly exceed the PEL.

- All Class I, II, and III asbestos work or any other operations where airborne asbestos exceeds the PEL must be done within regulated areas. Only authorized personnel may enter. The designated "competent person" supervises all asbestos work performed in the area.

- Employers must mark off the regulated area in any manner that minimizes the number of persons within the area and protects persons outside the area from exposure to airborne asbestos. Critical barriers or negative-pressure enclosures may mark off the regulated area.

- Posted warning signs demarcating the area must be readable and understandable. The signs must bear the following information:

  DANGER
  ASBESTOS
  CANCER AND LUNG DISEASE HAZARD
  AUTHORIZED PERSONNEL ONLY
  RESPIRATORY AND PROTECTIVE
  CLOTHING ARE REQUIRED IN THIS
  AREA

- Employers must supply an appropriate respirator and protective clothing to all persons entering regulated areas.

- Employees must not eat, drink, smoke, chew tobacco or gum, or apply cosmetics in regulated areas.

- An employer performing work in a regulated area must inform other employers onsite of the:
  - nature of the work,
  - regulated area requirements, and
  - measures taken to protect onsite employees.

- The contractor creating or controlling the source of asbestos contamination must abate the hazards. All employers with employees working near regulated areas must assess

each day the enclosure's integrity or the effectiveness of control methods to prevent airborne asbestos from migrating.

- A general contractor on a construction project must oversee all asbestos work, even though he or she may not be the designated "competent person." As supervisor of the entire project, the general contractor determines whether asbestos contractors comply with the standard and ensures they correct any problems.

WHAT CONTROL METHODS ARE IN THE STANDARD?

- For all covered work, employers must use the following control methods to comply with the PEL and EL:

  - local exhaust ventilation equipped with high efficiency particulate air (HEPA) filter dust collection systems,

  - enclosure or isolation of processes producing asbestos dust,

  - ventilation of the regulated area to move contaminated air away from the employees' breathing zone and toward a filtration or collection device equipped with a HEPA filter, and

  - feasible engineering and work practice controls to reduce exposure to the lowest possible levels, supplemented by respirators to reach the PEL or EL or lower.

- Employers must use the following engineering controls and work practices for all operations regardless of exposure levels:

  - vacuum cleaners equipped with HEPA filters to collect all asbestos-containing or presumed asbestos-containing debris and dust,

  - wet methods or wetting agents to control employee exposures--except when infeasible (e.g., due to the creation of electrical hazards, equipment malfunction, and slipping hazards), and

  -prompt cleanup and disposal in leak-tight containers of asbestos-contaminated wastes and debris.

- The following work practices and engineering controls are **prohibited** for all asbestos-related work or work that disturbs asbestos or presumed asbestos-containing materials, regardless of measured exposure levels or the results of initial exposure assessments:

  -high-speed abrasive disc saws not equipped with a point-of-cut ventilator or enclosure with HEPA-filtered exhaust air,

  -compressed air to remove asbestos or asbestos-containing materials--unless the compressed air is used with an enclosed ventilation system,

  -dry sweeping, shoveling, or other dry cleanup of dust and debris, and

  -employee rotation to reduce exposure.

In addition, the Asbestos Standard for Construction establishes specific requirements for each class of asbestos work in construction.

Class I Work

- A designated "competent person" must supervise all Class I work, including installing and operating the control system. Employers must place critical barriers over all openings to regulated areas or use another barrier or isolation method to prevent airborne asbestos from migrating for:

  - all Class I jobs removing more than 25 linear or 10 square feet of thermal system insulation or surfacing material,

  - all other Class I jobs without a negative exposure assessment, and

  - areas adjacent to a Class I regulated area where employees are working.

Otherwise, employers must perform perimeter area surveillance during each work shift. No asbestos dust should be visible. Perimeter monitoring must show that clearance levels are met (as contained in 40 CFR 763, Subpart E of the "EPA Asbestos in Schools" rule) or that perimeter area levels are no greater than background levels.

- For all Class I jobs:

  - HVAC systems must be isolated in the regulated area by sealing with a double layer of 6 mil plastic or the equivalent,

  - impermeable dropcloths must be placed on surfaces beneath all removal activity,

  - all objects within the regulated area must be covered with secured impermeable dropcloths or plastic sheeting, and

  - for jobs without a negative exposure assessment or where exposure monitoring shows the PEL is exceeded, employers must ventilate the regulated area to move the contaminated air away from the employee breathing zone and toward a HEPA filtration or collection device.

- In addition, employees performing Class I work must use one or more of the following control methods (For the specifications, limitations, and recommended work practices of these required control methods, refer to the Asbestos Standard for Construction, 29 CFR 1926.1101.):

  -glove box systems can be used to remove asbestos-containing or presumed asbestos-containing materials from straight runs of piping,

  -negative-pressure glove box systems can be used to remove asbestos or presumed asbestos-containing materials from piping,

  -negative-pressure glove box systems can be used to remove asbestos or presumed asbestos-containing materials from pipe runs,

  -water spray process systems may be used to remove asbestos or presumed asbestos-containing materials from coldline piping if employees carrying out the process have completed a 40-hour training course on its use in addition to training required for all employees performing Class I work, or

  -a small walk-in enclosure that accommodates no more than 2 people (mini-enclosure) may be used if the disturbance or removal can be completely contained by the enclosure.

- Employers may use different or modified engineering and work practice controls if the following provisions are met:

  -the control method encloses, contains, or isolates the process or source of airborne asbestos dust, or captures and redirects the

dust before it enters into the employee's breathing zone,

- a certified industrial hygienist or licensed professional engineer qualified as a project designer evaluates the work area, the projected work practices, and the engineering controls, and certifies in writing, that based on evaluations and data, the planned control method adequately reduces direct and indirect employee exposure to or below the PEL under worst case conditions. The planned control method also must prevent asbestos contamination outside the regulated area, as measured by sampling meeting the requirements of EPA's Asbestos in Schools rule or perimeter monitoring, and

- before using alternative methods to remove more than 25 linear or 10 square feet of thermal system insulation or surfacing material, employers must send a copy of the evaluation and certification to the PEOSH Program, NJDOH, CN 360, Trenton, NJ 08625-0360.

Class II Work

- The "competent person" must supervise all Class II work. Employers must use critical barriers over all openings to the regulated area or another barrier or isolation method to prevent airborne asbestos from migrating for:

  - all indoor Class II jobs without a negative exposure assessment,

  - where changing conditions indicate exposure above the PEL, or

  - where asbestos-containing materials are not removed substantially intact.

- Otherwise, employers must perform perimeter area monitoring to verify that the barrier works properly. Impermeable dropcloths must be placed on all surfaces beneath removal activities.

- All Class II asbestos work can use the same work practices and requirements as Class I asbestos jobs. Alternatively, Class II work can be performed more easily using simple work practices set out in the standard for specific jobs.

- For removing vinyl and asphalt flooring materials containing asbestos or installed in buildings constructed before 1981 and not verified as asbestos-free, employers must ensure that employees:

  -do not sand flooring or its backing,

  -do not rip up resilient sheeting,

  -do not dry sweep,

  -do not use mechanical chipping unless performed in a negative-pressure enclosure,

  -use vacuums equipped with HEPA filters to clean floors,

  -use wet methods when removing resilient sheeting by cutting,

  -use wet methods to scrape residual adhesives and/or backing,

  -remove tiles intact, unless impossible,

  -may omit wetting when tiles are heated and removed intact, and

  -assume resilient flooring material--including associated mastic and backing--are asbestos-containing, unless an industrial hygienist determines it asbestos-free.

- To remove asbestos-containing roofing materials, employers must ensure that employees:

  -remove them intact,

  -use wet methods when possible,

- continuously mist cutting machines during use, unless the "competent person" determines misting to be unsafe,

- immediately HEPA-vacuum all loose dust along the cut,

- lower as soon as possible or by the end of the work shift any unwrapped or unbagged roofing material to the ground via a covered, dust-tight chute, crane, or hoist,

- transfer unwrapped materials to a closed receptacle to prevent dispersing the dust when lowered, and

- isolate roof level heating and ventilation air intake sources or shut down the ventilation system.

- When removing cementitious asbestos-containing siding and shingles or transite panels, employers must ensure that employees:

  - do not cut, abrade, or break siding, shingles, or transite panels unless methods less likely to result in asbestos fiber release cannot be used,

  - spray each panel or shingle with amended water before removing,

  - lower to the ground any unwrapped or unbagged panels or shingles via a covered dust-tight chute, crane, or hoist, or place them in an impervious waste bag or wrap them in plastic sheeting, as soon as possible or by the end of the work shift, and

  - cut nails with flat, sharp instruments.

- When removing asbestos-containing gaskets, employers must ensure that employees:

  - remove gaskets within glove bags if they are visibly deteriorated and unlikely to be removed intact,

    -thoroughly wet the gaskets with amended water prior to removing,

    -immediately place the wet gaskets in a disposal container, and

    -scrape using wet methods to remove residue.

- For removal of any other Class II asbestos-containing material, employers must ensure that employees:

  -do not cut, abrade, or break the material unless infeasible,

  -thoroughly wet the material with amended water before and during removal,

  -remove the material intact, if possible, and

  -immediately bag or wrap removed asbestos-containing materials or keep them wet until transferred to a closed receptacle at the end of the work shift.

- Employers may use different or modified engineering and work practice controls if:

  -they can demonstrate by employee exposure data during the use of such methods and under similar conditions that employee exposure will not exceed the PEL under any anticipated circumstances, or

  -the "competent person" evaluates the work area, the projected work practices, and the engineering controls and certifies, in writing, that they will reduce all employee exposure to below the PEL under expected conditions. The evaluation must be based on exposure data for conditions closely resembling those of the current job and for employees with equivalent training and experience.

Class III Work

- Employers must use wet methods and local exhaust ventilation, when feasible, during Class III work.

- Where drilling, cutting, abrading, sanding, chipping, breaking, or sawing thermal system insulation or surfacing materials occurs, employers must use impermeable dropcloths as well as mini-enclosures, glove bag systems, or other effective isolation methods.

- Where a negative exposure assessment does not exist or monitoring shows the PEL is exceeded, employers must contain the area with impermeable dropcloths and plastic barriers or other isolation methods and ensure that employees wear respirators.

Class IV Work

- Employees conducting Class IV asbestos work must have attended an asbestos awareness training program.

- Employees must use wet methods and HEPA vacuums to promptly clean asbestos-containing or presumed asbestos-containing debris. When cleaning debris and waste in regulated areas, employees must wear respirators.

- In areas where thermal system insulation or surfacing material is present, employees must assume that all waste and debris contain asbestos.

Please refer to Appendix A (end of publication) for a quick reference guide of provisions listed by work classification.

WHAT ARE THE RESPIRATORY PROTECTION REQUIREMENTS?

- Respirators must be used during:

  - all Class I asbestos jobs,

  -all Class II work where an asbestos-containing material is not removed substantially intact,

  -all Class II and III work not using wet methods,

  -all Class II and III work without a negative exposure assessment,

  -all Class III jobs where thermal system insulation or surfacing asbestos-containing or presumed asbestos-containing material is cut, abraded, or broken,

  -all Class IV work within a regulated area where respirators are required,

  -all work where employees are exposed above the PEL or EL, and

  -emergencies.

- Employers must provide respirators at no cost to employees, selecting the appropriate type from among those approved by the Mine Safety and Health Administration (MSHA) and NIOSH.

- For all employees performing Class I work in regulated areas and for jobs without a negative exposure assessment, employers must provide full facepiece supplied-air respirators operated in pressure-demand mode and equipped with an auxiliary positive-pressure, self-contained breathing apparatus.

- Employers must provide half-mask purifying respirators-- other than disposable respirators--equipped with high-efficiency filters for Class II and III asbestos jobs without a negative exposure assessment and for Class III jobs where work disturbs thermal system insulation or surfacing asbestos-containing or presumed asbestos-containing materials.

- If a particular job is not covered above and exposures are above the PEL or EL, the Asbestos Standard for Construction, 29 CFR 1926.1101 contains a table specifying types of respirators to use.

- Employers must institute a respiratory program in accordance with the Respiratory Protection Standard, 29 CFR 1910.134. Employers must permit employees using filter respirators to change the filter elements when breathing resistance increases; employers must maintain an adequate supply of filters for this purpose. Employers must permit employees wearing respirators to leave work areas to wash their faces and respirator facepieces as necessary to prevent skin irritation.

- Employers must ensure that the respirators issued have the least possible facepiece leakage and fit properly. For employees wearing negative-pressure respirators, employers must perform either quantitative or qualitative face fit tests with the initial fitting and at least every 6 months following. The qualitative fit tests can be used only for fit testing of half-mask respirators where they are permitted or for full facepiece air-purifying respirators where they are worn at levels where half facepiece air-purifying respirators are permitted. Employers must conduct qualitative and quantitative fit tests in accordance with Occupational Exposure to Asbestos (29 CFR 1926.1001, Appendix C) and use the tests to select facepieces that provide the required protection.

- Employers must not assign any employee, who based on the most recent physical exam and the examining physician's recommendations would be unable to function normally, to tasks requiring respirator use. Employers must assign such employees to other jobs or give them the opportunity to transfer to different positions in the same geographical area and with the same seniority, status, pay rate, and job benefits as before transferring, if such positions are available.

WHAT PROTECTIVE CLOTHING IS NEEDED?

- Employers must provide and require the use of protective clothing such as coveralls or similar whole-body clothing, head coverings, gloves, and foot coverings for:

  -any employee exposed to airborne asbestos exceeding the PEL or EL;

  -work without a negative exposure assessment;

  -any employee performing Class I work involving the removal of over 25 linear or 10 square feet of thermal system insulation or surfacing asbestos-containing or presumed asbestos-containing materials.

- Employers must launder contaminated clothing to prevent the release of airborne asbestos in excess of the PEL or EL. Any employer who gives contaminated clothing to another person for laundering must inform him or her of the contamination.

- Employers must transport contaminated clothing in sealed, impermeable bags or other closed impermeable containers bearing appropriate labels.

- The "competent person" must examine employee worksuits at least once per workshift for rips or tears. Rips or tears found while the employee is working must be mended or replaced immediately.

WHAT HYGIENE FACILITIES AND PRACTICES ARE REQUIRED?

- Decontamination requirements for Class I asbestos work are:

  - For employees performing Class I asbestos jobs involving over 25 linear or 10 square feet of thermal system insulation or surfacing asbestos-containing or presumed asbestos-containing materials, employers must create a decontamination area adjacent to and connected with the regulated area. Employees must enter and exit the regulated area through the decontamination area.

  - The decontamination area must be composed of an equipment room, shower area, and clean room in series. The equipment room must be supplied with impermeable, labeled bags and containers to store and dispose of contaminated protective equipment. Shower facilities must be adjacent to both the equipment and clean rooms, unless work is performed outdoors or this arrangement is impractical. If so, employers must ensure that employees remove asbestos contamination from their worksuits in the equipment room using a HEPA vacuum before proceeding to a shower non-adjacent to the work area; or remove their contaminated worksuits in the equipment room, don clean worksuits, and proceed to a shower non-adjacent to the work area.

  - The clean room must have a locker or appropriate storage container for each employee unless work is performed outdoors or this arrangement is not possible. In such a case, employees may clean protective clothing with a portable HEPA vacuum before leaving the regulated area. Employees then must change into "street clothing" in clean change areas.

    -Before entering the regulated area, employees must enter the decontamination area through the clean room; remove and deposit street clothing within a provided locker; and put on protective clothing and respiratory protection before leaving the clean area. To enter the regulated area, employees must pass through the equipment room.

    -Before exiting the regulated area, employees must remove all gross contamination and debris and then remove their protective clothing in the equipment room depositing the clothing in labeled, impermeable bags or containers. Employees must shower before entering the clean room to change into "street clothing."

    -When employees consume food or beverages at the Class I worksite, employers must provide lunch areas with airborne asbestos levels below the PEL and/or excursion limit.

- Decontamination requirements for other Class I, Class II and Class III asbestos work without a negative exposure assessment and where exposures exceed the PEL are:

  -Employers must establish an equipment area adjacent to the regulated area for the decontamination of employees and their equipment. The area must be covered by an impermeable dropcloth on the floor or horizontal work surface and must be large enough to accommodate equipment cleaning and personal protective equipment removal without spreading contamination beyond the area. Before removing work clothing, employees must clean it with a HEPA vacuum.

- All equipment and the surfaces of containers filled with asbestos-containing materials must be cleaned prior to removal.

- Employers must ensure employees enter and exit the regulated area through the equipment area.

- Decontamination requirements for Class IV work are:

  - Employers must ensure employees performing Class IV work within a regulated area comply with the hygiene practices required of employees performing work with higher classifications in that regulated area. Otherwise, employees cleaning up thermal system insulation or asbestos-containing debris must use decontamination facilities required for Class II and III work where exposure exceeds the PEL or no negative exposure assessment exists.

- Smoking:

  - Employers must ensure that employees performing **any** class of asbestos work do not smoke in any work area with asbestos exposure.

WHAT INFORMATION AND TRAINING IS REQUIRED?

- The communication of potential asbestos exposure hazards is vital to prevent exposure. Most asbestos-related construction involves previously installed building materials. Building owners often are the only or best source of information concerning these materials. The owners and employers of potentially exposed employees have specific duties under the standard.

- Before beginning work, building owners must identify at the work site all thermal system insulation, sprayed or troweled-on surfacing materials in buildings, and resilient flooring material installed before 1981. Building owners also must notify, in writing, the following persons of the presence, locations, and quantity of asbestos-containing or presumed asbestos-containing materials:

  -prospective employers applying or bidding for work in or adjacent to areas containing asbestos,

  -the owner's employees who work in or adjacent to these areas,

  -other employers on multi-employer work sites with employees working in or adjacent to the area, and

  -tenants who will occupy the areas containing such materials.

- All employers discovering asbestos-containing materials on a worksite must notify the building owner and other employers onsite within 24 hours of its presence, location, and quantity.

- Employers also must inform building owners and employees working in nearby areas of the precautions taken to confine airborne asbestos. Within 10 days of project completion, employers must inform building owners and other employers onsite of the current locations and quantity of remaining asbestos-containing materials and any final monitoring results.

- At any time, employers or building owners may demonstrate that a presumed asbestos-containing material does not contain asbestos by inspecting the material (conducted according to the requirements of the Asbestos Hazard Response Act (AHERA)(40 CFR 763, Subpart E)) and by performing tests to prove asbestos is not present.

- Employers do not have to inform employees of asbestos-free building materials present; however, employers must retain the information, data, and analysis supporting the determination.

Signs

- At the entrance to mechanical rooms or areas containing thermal system insulation and surfacing asbestos-containing materials, the building owner must post signs identifying the material present, its specific location, and appropriate work practices that ensure it is not disturbed.

- Employers must post warning signs in regulated areas to inform employees of the dangers and necessary protective steps to take before entering.

Labels

- Employers must attach warning labels to all products and containers of asbestos, including waste containers, and all installed asbestos products, when possible. Labels must be printed in large, bold letters on a contrasting background and used in accordance with the New Jersey Worker and Community Right to Know Act, N.J.S.A. 34:5A-1 et seq.

- All labels must contain a warning statement against breathing asbestos fibers and contain the following legend:

  DANGER
  CONTAINS ASBESTOS FIBERS
  AVOID CREATING DUST
  CANCER AND LUNG DISEASE HAZARD

- Labels are not required where:

  -asbestos is present in concentrations less than 1 percent by weight, or

  -a bonding agent, coating, or binder has altered asbestos fibers, prohibiting the release of airborne asbestos over the PEL or EL during reasonable use, handling, storage, disposal, processing, or transportation.

- When building owners or employers identify previously installed asbestos or presumed asbestos-containing materials, labels or signs must be attached or posted to inform employees which materials contain asbestos. Attached labels must be clearly noticeable and readable.

Employee Information and Training
General Training Requirements

- Employers must, at no cost to employees, provide a training program for all employees installing and handling asbestos-containing products and for employees performing Class I through IV asbestos operations. Employees must receive training prior to or at initial assignment and at least annually thereafter.

- Training courses must be easily understandable for employees and must inform them of :

  -ways to recognize asbestos,

  -the adverse health effects of asbestos exposure,

  -the relationship between smoking and asbestos in causing lung cancer,

  -operations that could result in asbestos exposure and the importance of protective controls to minimize exposure,

  -the purpose, proper use, fitting instruction, and limitations of respirators,

  -the appropriate work practices for performing asbestos jobs,

  -medical surveillance program requirements,

  -the contents of the standard,

  -the names, addresses, and phone numbers of public health organizations that provide information and materials or conduct smoking cessation programs, and

- sign and label requirements and the meaning of legends on them.

- The employer also must provide, at no cost to employees, written materials relating to employee training and self-help smoking cessation programs.

Additional Training Based on Work Class

- For Class I and II operations, training must be equivalent in curriculum, method, and length to the EPA Model Accreditation Plan (MAP) asbestos abatement worker training (40 CFR 763, Subpart E, Appendix C). For employees performing Class II operations involving one generic category of building materials containing asbestos (e.g., roofing, flooring, siding materials or transite panels), training may be covered in an 8-hour course that includes "hands-on" experience.

- For Class III operations, training must be equivalent in curriculum and method to the 16-hour "Operations and Maintenance" course developed by EPA for maintenance and custodial workers whose work disturbs asbestos-containing materials (40 CFR 763.92). The course must include "hands-on" training on proper respirator use and work practices.

- For Class IV operations, training must be equivalent in curriculum and method to EPA awareness training. Training must focus on the locations of asbestos-containing or presumed asbestos-containing materials and the ways to recognize damage and deterioration and avoid exposure. The course must be at least two hours in length.

- Employers must provide the PEOSH Program with all information and training materials as requested.

HOW CAN TRAINING BE ARRANGED?

- Required training can be obtained through a number of sources. Consultants or other means of obtaining required training may be used, provided that the training content meets the minimum requirements and trainers meet the criteria outlined in the standard. The PEOSH Program recommends using consultants and training courses that are certified by the New Jersey Department of Health and Senior Services, Consumer and Environmental Health Services. For more information contact the Consumer and Environmental Health Services at (609) 984-2193.

- The PEOSH Program provides speakers who present an overview of the Asbestos Standard for Construction. This overview assists employers and employees in understanding the requirements of the standard.

WHAT ARE THE HOUSEKEEPING REQUIREMENTS?

- Asbestos waste, scrap, debris, bags, containers, equipment, and contaminated clothing consigned for disposal must be collected and disposed of in sealed, labeled, impermeable bags or other closed, labeled impermeable containers. Employees must use HEPA-filtered vacuuming equipment and must empty it so as to minimize asbestos reentry into the workplace.

- All vinyl and asphalt flooring material must remain intact unless the building owner demonstrates that the flooring does not contain asbestos. Sanding flooring material is prohibited. Employees stripping finishes must

use wet methods and low abrasion pads at speeds lower than 300 revolutions per minute.

- Burnishing or dry buffing may be done only on flooring with enough finish that the pad cannot contact the flooring material.

- Employees must not dust, sweep, or vacuum without a HEPA filter in an area containing thermal system insulation or surfacing material or visibly deteriorated asbestos-containing materials.

- Employees must promptly clean and dispose of dust and debris in leak-tight containers.

WHO NEEDS MEDICAL SURVEILLANCE?

- Employers must make available a medical surveillance program for all employees:

  - who for a combined total of 30 or more days per year engage in Class I, II, or III work or are exposed at or above the PEL or EL, or

  - who wear negative-pressure respirators.

WHAT MEDICAL SURVEILLANCE NEEDS TO BE DONE?

- A licensed physician must perform or supervise all medical exams and procedures, provided at no cost to employees and at a reasonable time.

- Employers must make medical exams and consultations available to employees:

  - prior to employee assignment to an area where negative-pressure respirators are worn,

  - within 10 working days after the 30th day of exposure for employees assigned to an area where exposure is at or above the PEL for 30 or more days per year,

  -at least annually thereafter, and

  -when the examining physician suggests them more frequently.

- If the employee was examined within the past 12 months and that exam meets the criteria of the standard, however, another medical exam is not required.

- Medical exams must include the following:

  -a medical and work history,

  -completion of a standardized questionnaire with the initial exam (29 CFR 1926.1101, Appendix D, Part 1) and an abbreviated standardized questionnaire with annual exams (29 CFR 1926.1101, Appendix D, Part 2),

  -a physical exam focusing on the pulmonary and gastrointestinal systems, and

  -any other exams or tests suggested by the examining physician.

- Employers must provide the examining physician with:

  -a copy of the construction industry Asbestos Standard and its appendices,

  -a description of the affected employee's duties relating to exposure,

  -the employee's representative exposure level or anticipated exposure level,

  -a description of any personal protective equipment and respiratory equipment used, and

  -information from previous medical exams not otherwise available.

- It is the employer's responsibility to obtain the physician's written opinion, containing results of the medical exam and:

- any medical conditions of the employee that increase health risks from asbestos exposure,

- any recommended limitations on the employee or protective equipment used,

- a statement that the employee has been informed of the results of the medical exam and any medical conditions resulting from asbestos exposure, and

- a statement that the employee has been informed of the increased risk of lung cancer from the combined effect of smoking and asbestos exposure.

- The physician must not reveal in the written opinion specific findings or diagnoses unrelated to occupational exposure to asbestos. The employer must provide a copy of the physician's written opinion to the affected employee within 30 days after receipt.

WHAT RECORDS NEED TO BE KEPT?

Objective Data Records

- Where employers use objective data to demonstrate that products made from or containing asbestos cannot release fibers in concentrations at or above the PEL or EL, they must keep an accurate record for as long as it is relied on and include:

  - the name of the exempt product,

  - the source of the objective data,

  - the testing protocol, test results, and analysis of the material for release of asbestos,

  - a description of the exempt operation and supporting data, and

  -other data relevant to operations, materials, processes, or employee exposures.

Monitoring Records

- Employers must keep records of all employee exposure monitoring for at least 30 years, including:

  -the date of measurement,

  -the operation involving asbestos exposure that was monitored,

  -sampling and analytical methods used and evidence of their accuracy,

  -the number, duration, and results of samples taken,

  -the type of protective devices worn, and

  -the name, social security number, and exposures of the represented employees.

- Employers must make exposure records available when requested to affected employees, former employees, their designated representatives, and/or the PEOSH Program.

Medical Surveillance Records

- Employers must keep all medical surveillance records for the duration of the employee's employment plus 30 years, including:

  -the employee's name and social security number,

  -the employee's medical exam results, including the medical history, questionnaires, responses, test results, and physician's recommendations,

- the physician's written opinions,

- any employee medical complaints related to asbestos exposure, and

- a copy of the information provided to the examining physician.

- Employee medical surveillance records must be available to the employee, anyone having specific written consent of that employee, and/or the PEOSH Program.

Other Recordkeeping Requirements

- Employers must maintain all employee training records for one year beyond the last date of employment for each employee.

- Where data demonstrates presumed asbestos-containing materials do not contain asbestos, building owners or employers must keep the records for as long as they rely on them. Building owners must maintain written notifications on the identification, location, and quantity of any asbestos-containing or presumed asbestos-containing materials for the duration of ownership and transfer the records to successive owners.

- When an employer ceases to do business without a successor to keep the records, the employer must notify the PEOSH Program at least 90 days prior to their disposal and transmit them as requested.

WHAT ARE THE "COMPETENT PERSON" REQUIREMENTS?

- On all construction sites with asbestos operations, employers must name a "competent person" qualified and authorized to ensure worker safety and health, as required by Subpart C, General Safety and Health Provisions for Construction (29 CFR 1926.20). Under these requirements for safety and health prevention programs, the "competent person" must frequently inspect job sites, materials, and equipment.
- In addition, for Class I jobs the "competent person" must do onsite inspections at least once during each work shift and upon employee request. For Class II and III jobs, the "competent person" must inspect often enough to assess changing conditions and upon employee request.

- At worksites where employees perform Class I or II asbestos work, the "competent person" must supervise:

  -the setup and ensure the integrity of regulated areas, enclosures, or other containments by onsite inspection,

  -setup procedures to control entry to and exit from the enclosure or area,

  -all employee exposure monitoring, ensuring it is properly conducted,

  -use of required protective clothing and equipment by employees working within the enclosure and/or using glove bags,

  -proper setup, removal, and performance of engineering controls, work practices, and personal protective equipment through onsite inspections,

  -employee use of hygiene facilities and required decontamination procedures, and

  -notification requirements.

- The "competent person" must attend a comprehensive training course for contractors and supervisors certified by the U.S. Environmental Protection Agency (EPA) or a state-approved training provider or a course that is equivalent in length and content.

- For Class III and IV asbestos work, training must include a course equivalent in length and content to the 16-hour "Operations and Maintenance" course developed by EPA for maintenance and custodial workers.

WHEN DOES THE STANDARD GO INTO EFFECT?

- The standard was published in the New Jersey Register on August 5, 1996. The effective date is August 5, 1996. All obligations of this standard begin on the effective date except as follows:

Methods of compliance	February 5, 1997
Respiratory protection	February 5, 1997
Hygiene facilities and practices for employees	February 5, 1997
Communication of hazards	February 5, 1997
Housekeeping	February 5, 1997
Medical surveillance	February 5, 1997
Designation and training of competent person	February 5, 1997

FOR MORE INFORMATION, CONTACT

New Jersey Department of Health and Senior Services
Public Employees Occupational Safety and Health (PEOSH) Program
CN 360, 7th Floor
Trenton, NJ 08625-0360
(609) 984-1863

This information bulletin provides an overview of the New Jersey PEOSH construction industry Asbestos Standard. Consult the standard itself for complete information. Information used in this bulletin was obtained from federal Occupational Safety and Health Administration publications.

Appendix A - Quick Reference of Provisions by Work Class

	Class 1	Class 2	Class 3	Class 4
Definition	Removal of thermal system insulation (TSI) and surfacing materials (SM)	Removal of all other asbestos not TSI or SM	Maintenance and repair operations disturbing asbestos-containing materials	Housekeeping and custodial operations (including construction site clean-up)
Regulated Areas	Required (signs required)	Required (signs required)	Required (signs required)	Required (signs required)
"Competent Person"	Required onsite - inspect each workshift - contractors and supervisors training required	Required onsite - inspect often - contractors and supervisors training required	Required onsite - inspect often - operations and maintenance training required	Required onsite - inspect often - operations and maintenance training required
Air Monitoring	- Initial if no negative exposure assessment (NEA) - Daily if no NEA - Terminate if < permissible exposure limit (PEL) - Additional if conditions change	- Initial if no NEA - Daily if no NEA - Terminate if < PEL - Additional if conditions change	- Initial if no NEA - Periodic to accurately predict if > PEL - Terminate if < PEL - Additional if conditions change	
Medical Surveillance	Required if - wearing negative-pressure respirator - > PEL - >30 days exposure/year	Required if - wearing negative-pressure respirator - > PEL - >30 days exposure/year	Required if - wearing negative-pressure respirator - > PEL - >30 days exposure/year	Required if - wearing negative-pressure respirator - > PEL
Respirators	Mandatory for Class 1 jobs	Mandatory if - non-intact removal - no NEA - >PEL - dry removal (except for roofing) - in emergencies	Half-mask air-purifying respirator minimum if - no NEA - TSI or SM disturbed - > PEL Mandatory is - dry removal (except for roofing) - in emergencies	Mandatory if - in regulated area where required - if >PEL - in emergencies

Appendix A - Quick Reference of Provisions by Work Class

	Class 1	Class 2	Class 3	Class 4
Protective Clothing and Equipment	Required for all jobs if - 25 linear or 10 square feet of TSI or SM removal - no NEA - >PEL	Required for all jobs if - no NEA - > PEL	Required for all jobs if - no NEA - > PEL	Required for all jobs if - no NEA - > PEL
Training	Equivalent to *Asbestos Hazard Response Act* (AHERA) worker course	Equivalent to AHERA worker course or specific work practices if removing one ACM only	Equivalent to AHERA operations and maintenance courses	Equivalent to AHERA Awareness Training
Decontamination Procedures	Full decom unit required if >25 linear or 10 square feet TSI or SM removal - connected shower/clean room required - vacuum, change, shower elsewhere - detailed procedures Lunch areas required If < 25 linear or 10 square feet TSI or SM removal or >PEL or no NEA - equipment room/area required - dropcloths required - area must accommodate clean-up - must decontaminate all personal protective equipment - must enter regulated area through equipment room/decon area No smoking in work area	If > PEL or no NEA - equipment room/area required - dropcloths required - area must accommodate clean-up - must decontaminate all personal protective equipment - must enter regulated area through equipment room/decon area No smoking in work area	If > PEL or no NEA - equipment room/area required - dropcloths required - area must accommodate clean-up - must decontaminate all personal protective equipment - must enter regulated area through equipment room/decon area If NEA, must vacuum No smoking in work area	If > PEL or no NEA - equipment room/area required - dropcloths required - area must accommodate clean-up - must decontaminate all personal protective equipment - must enter regulated area through equipment room/decon area No smoking in work area

	Class 1	Class 2	Class 3	Class 4
Required Work Practices and Engineering Controls	- wet methods - HEPA vacuum - prompt clean-up / disposal	- wet methods - HEPA vacuum - prompt clean-up / disposal	- wet methods - HEPA vacuum - prompt clean-up / disposal	- wet methods - HEPA vacuum - prompt clean-up / disposal
Required Work Practices and Engineering controls to Comply with Permissible Exposure Limit (PEL)	- HEPA local exhaust - enclosure - directed ventilation - other work practices - supplement with respirators	- HEPA local exhaust - enclosure - directed ventilation - other work practices - supplement with respirators	- HEPA local exhaust - enclosure - directed ventilation - other work practices - supplement with respirators	- HEPA local exhaust - enclosure - directed ventilation - other work practices - supplement with respirators
Prohibited Work Practices and Engineering Controls	- high speed abrasive disc saws without HEPA - compressed air without capture device - dry sweeping / shoveling - employee rotation	- high speed abrasive disc saws without HEPA - compressed air without capture device - dry sweeping / shoveling - employee rotation	- high speed abrasive disc saws without HEPA - compressed air without capture device - dry sweeping / shoveling - employee rotation	- high speed abrasive disc saws without HEPA - compressed air without capture device - dry sweeping / shoveling - employee rotation
Controls and Work Practices	- critical barrier/ isolation methods required if > 25 linear or 10 square feet of TSI or SM removal < 25 linear or 10 square feet of TSI or SM removal only if no NEA or adjacent workers - HVAC isolation required - dropcloths required - directed ventilation required if no NEA or > PEL	For indoor work only: - critical barriers/ isolation methods required if no NEA likely > PEL non-intact removal - dropcloths required If > PEL, must use: - local HEPA exhaust - process isolation - directed ventilation - additional feasible controls supplemented with respirators	- critical barriers required if no NEA > PEL via monitoring - dropcloths required - local HEPA exhaust required Enclosure or isolation of operation required if: TSI or SM is drilled, cut, abraded, sanded, sawed, or chipped	- See Required Work Practices and Engineering controls

	Class 1	Class 2	Class 3	Class 4
Controls and Work Practices (continued)	Also, one or more of the following controls must be used: - negative-pressure enclosure - glove bag for straight runs of pipe - negative pressure glove bag for pipe runs - water spray process - mini-enclosure	For removal of vinyl and asphalt flooring materials: - no sanding - HEPA vacuum - wet methods - no dry sweeping - chipping done in negative-pressure enclosure - intact removal, if possible - dry heat removal allowed - assume contains asbestos without an analysis For removal of built-up roofing materials or asbestos-cement shingles: - intact removal, if possible - wet methods, if feasible - cutting machine misting - HEPA-vacuum debris - lower by day's end - control dust of unbagged material - roof vent system protected For removal of cementitious siding, shingles or transite panels: - intact removal, if possible - wet methods - lower via dust-tight chute by day's end - cut nail heads		

	Class 1	Class 2	Class 3	Class 4
Controls and Work Practices (continued)		For removal of gaskets: - use glove bags if not intact - wet removal - prompt disposal - wet scrapping Additional requirements - wet methods - intact removal, if possible - cutting, abrading, or breaking prohibited		

PEOSH PROGRAM
READER RESPONSE CARD

PEOSH Asbestos Standard for Construction
29 CFR 1926.1101

Dear Reader:

Please take a few minutes to help us evaluate this publication. Please check the following:

Check the category that best describes your position:

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Which section did you find most useful?

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What other occupational health topics would you like to see the PEOSH Program develop an information bulletin on?

Other comments and suggestions.

Return form to NJDHSS, PEOSH Program, CN 360, Trenton, NJ 08625